CLAIM LISTING

Claim 1 (Currently Amended): A method of determining *in vitro* the capacity of a cell population to induce bone formation *in vivo* comprising the steps of:

a) providing a sample of a cell population;

b) dividing said sample into a first and a second part ~~containing an equal number of cells~~;

c) culturing the first part in the presence of an osteogenic stimulation factor;

d) culturing the second part in the absence of an osteogenic stimulation factor;

e) determining degrees of expression of a bone-specific protein; and

f) comparing the degrees of expression of the bone-specific protein of the first part and the second part thereby providing a measure for the capacity of the bone cell population to induce bone formation *in vivo*.

Claim 2 (Original): A method according to claim 1, wherein the sample of a cell population is obtained through a biopsy from a patient who has to undergo surgery to receive a bone implant.

Claim 3 (Currently Amended): A method according to claim 2, where in the cell population comprises one or more of human bone marrow stromal cells~~, and~~/or human osteoprogenitor cells.

Claim 4 (Previously Presented): A method according to claim 1, wherein the osteogenic stimulation factor is dexamethasone or vitamin D3.

Claim 5 (Original): A method according to claim 4, wherein the osteogenic stimulation factor is used in an amount of 10^{-10} to 10^{-5} M.

Claim 6 (Previously Presented): A method according to claim 1, wherein the cells are cultured for 2 to 15 doubling times.

Claim 7 (Currently Amended): A method according to claim 1, wherein the cells are cultured in a culture medium comprising ~~based on~~ α-MEM.

Claim 8 (Currently Amended): A method according to claim 7, wherein the culture medium further comprises one or more of L-ascorbic acid 2-phosphate, an antibiotic, serum, ~~and/~~or a growth factor.

Claim 9 (Currently Amended): A method according to claim 8, wherein the growth factor is basic fibroblast growth factor ~~(bFGF)~~.

Claim 10 (Currently Amended): A method according to claim 8, wherein the antibiotic is chosen from the group consisting of penicillin G, gentamicin, fungizone, and streptomycin.

Claim 11 (Currently Amended): A method according to claim 1, wherein the bone-specific protein is chosen from the group consisting of alkaline phosphatase, osteocalcin ~~osteocalcine~~, bone sialoprotein ~~sialo-protein~~, osteopontin ~~osteopontine~~ and osteonectin ~~osteonectine~~.

Claim 12 (Currently Amended): A method according to claim 11, wherein the bone-specific protein is alkaline phosphatase, and wherein ~~of which~~ the degree of expression is determined by labeling the cells with an antibody specific for alkaline phosphatase and detecting labeled cells using flow cytometry.

Claim 13 (Currently Amended): A method according to claim 12, wherein the antibody is anti-ALP hybridoma B4-78 ~~(hybridoma B4-78)~~.

Claim 14 (Currently Amended): A method according to claim 11, wherein the bone-specific protein is alkaline phosphatase, and wherein ~~of which~~ the degree of expression is determined by contacting the cells of the first and second parts to a substrate for alkaline phosphatase, allowing the substrate to be converted to a reaction product, and detecting the reaction product.

Claim 15 (Currently Amended): A method according to claim 14, wherein the substrate is para-nitro phenyl phosphate or alpha-naphtol ~~AS-B1~~ AS-BI phosphate.

Claim 16 (Currently Amended): A method according to claim 15, wherein the cells are contacted with alpha-naphtol ~~AS-B1~~ AS-BI phosphate in the presence of a diazonium salt~~, preferably fast blue RR~~.

Claim 17 (Currently Amended): A method according to claim 15, wherein the cells are contacted with para-nitro phenyl phosphate, and the reaction product is ~~reacted further with Sigma 104R phosphatase substrate and subsequently detected by~~ observed in the presence of UV light.

Claim 18 (New): A method according to claim 16, wherein the diazonium salt is fast blue RR.